FACT SHEET

Databases and Related Resources From the Healthcare Cost and Utilization Project (HCUP)

Agency for Healthcare Research and Quality • 2101 East Jefferson Street • Rockville, MD 20852

www.ahrq.gov

AHRQ is the lead agency charged with supporting research designed to improve the quality of health care, reduce its cost, address patient safety and medical errors, and broaden access to essential services. AHRQ sponsors and conducts research that provides evidence-based information on health care outcomes; quality; and cost, use, and access. The information helps health care decisionmakers—patients and clinicians, health system leaders, and policymakers—make more informed decisions and improve the quality of health care services.

U.S. Department of Health and Human Services
Public Health Service

The unprecedented volume and pace of change in the U.S. health care system and the fact that changes are not occurring uniformly across the country require a new information paradigm. Scientifically sound, standardized databases at the national, regional, and State levels and tools for using them are needed to inform decisionmaking. The Healthcare Cost and Utilization Project (HCUP) is designed to fill this niche.

HCUP is a Federal-State-industry partnership to build a standardized, multistate health data system and companion set of complementary resources. HCUP databases are a family of longitudinal, administrative databases—including State-specific hospital-discharge databases and a national sample of discharges from community hospitals. The Agency for Healthcare Research and Quality (AHRQ) maintains the HCUP and has taken the lead in making the databases publicly available and developing Web-based products and software tools.

Databases

HCUP databases serve a unique function and are being tapped by analysts and researchers interested in hospital utilization, access, charges, quality, and outcomes. Researchers rely on HCUP data to identify, track, analyze, and compare trends at the national, regional, and State levels. Because of their large size, the HCUP databases are used to describe patterns of care for rare as well as common diseases; analyze infrequent as well as common hospital procedures; and track utilization for population subgroups, such as minorities, children, women, and the uninsured.

HCUP databases contain a core set of clinical and nonclinical information on all patients, regardless of payer—including persons covered by Medicare, Medicaid, private insurance, and the uninsured—translated into a uniform format to facilitate both multistate and national/State comparisons and analyses.

HCUP data users must agree to certain conditions: the databases can be used only for research and statistical purposes, and institutions cannot be identified in publications.

State Inpatient Databases (SID). Individual data sets from 29 participating States comprise the 2000 SID:

HCUP data include over 100 variables, such as:

- **Principal and secondary diagnoses**
- **Principal and secondary procedures**
- **Admission and discharge status**
- **Patient demographics (e.g., gender, age, median income for ZIP Code; for some States, race)**
- **Expected payment source (e.g., Medicare, Medicaid, private insurance, self-pay; for some States, additional discrete categories such as managed care)**
- **Total charges**
- **Length of stay**
- **Hospital characteristics (e.g., ownership, bed size, teaching status)**
- **Hospital and county identifiers that permit linkages to other databases**

Arizona*	Missouri
California*	New Jersey*
Colorado*	New York*
Connecticut	North Carolina*
Florida*	Oregon*
Georgia	Pennsylvania
Hawaii	South Carolina*
Illinois	Tennessee
Iowa*	Texas
Kansas	Utah*
Kentucky	Virginia
Maine*	Washington*
Maryland*	West Virginia*
Massachusetts*	Wisconsin*
Michigan	

* States that make their data files available through the HCUP Central Distributor as of September 2002.

Each data set contains the universe of that State's non-Federal hospital discharge abstracts. In aggregate, the SID represent approximately 80 percent of all U.S. hospital discharges, totaling over 26 million inpatient discharge abstracts. The SID are particularly well-suited for policy inquiries unique to a specific State, studies comparing two or more States, market area research, and small area variation analyses.

Data years currently available: 1995-2000.

How to order: As of September 2002, 17 States make their inpatient databases available through an AHRQ-designated HCUP Central Distributor, Social and Scientific Systems, Inc. Users should contact:

HCUP Central Distributor
Social and Scientific Systems, Inc.
8757 Georgia Avenue, Suite 1200
Silver Spring, MD 20910-3714
Phone: 866-556-4287 (toll free)
FAX: 301-628-3201
E-mail: hcup@s-3.com

The HCUP Central Distributor also provides information on how to obtain uniformly formatted data from the other SID States. AHRQ is working with these States with the aim of providing centralized access for all SID States. Information on ordering SID also may be found on the AHRQ Web site.

State Ambulatory Surgery Databases (SASD). Individual data sets from 15 participating States comprise the 2000 SASD:

Colorado*	New York*
Connecticut	North Carolina
Florida*	Pennsylvania
Kentucky	South Carolina
Maine	Tennessee
Maryland*	Utah*
Missouri	Wisconsin*
New Jersey*	

* States that make their data files available through the HCUP Central Distributor as of September 2002.

All SASD capture surgeries performed on the same day in which patients are admitted and released from hospital-affiliated ambulatory surgery sites. Some SASD contain records from freestanding surgery centers as well.

The SASD are well suited for research that requires complete enumeration of hospital-based ambulatory surgeries within market areas or States. Analysts and researchers use SASD to compare inpatient and outpatient ambulatory surgery patterns; to conduct market

area research or small area variation analyses; and to identify State-specific trends in ambulatory surgery utilization, access, charges, and outcomes.

Data years currently available: 1997-2000.

How to order: As of September 2002, seven States make their ambulatory surgery databases available through the AHRQ-designated HCUP Central Distributor (see address, p. 2). The HCUP Central Distributor also provides information on how to obtain uniformly formatted data from the other SASD States. AHRQ is working with these States with the aim of providing centralized access for all SASD States. Information on ordering SASD also may be found on the AHRQ Web site.

Nationwide Inpatient Sample (NIS). The NIS is a stratified probability sample of hospitals drawn from the SID. The NIS is designed to approximate a 20-percent sample of U.S. community hospitals. NIS 2000 includes over 7 million inpatient discharges from about 1,000 hospitals in 28 States. It is the largest all-payer inpatient database in the United States. The NIS is ideal for developing national estimates, for analyzing national trends, providing benchmark statistics that can be compared with regional and State level statistics, and for research that requires a large sample size.

Data years currently available: 1988-2000.

How to order: NIS 2000 may be purchased for $200 in a set of two CD-ROMs with accompanying documentation from the HCUP Central Distributor (see address, p.2). The HCUP Central Distributor can also provide information on how to purchase NIS CD-ROM data sets for earlier years (beginning 1988). Prices vary by data year and, as of August 2002, range from $160 to $322. Additional information is available on the AHRQ Web site.

Kids' Inpatient Database (KID). This dataset, drawn from the SID, is the first research database exclusively concerned with inpatient care of children and adolescents in the Nation's community hospitals. The KID is the only dataset on hospital use, outcomes, and charges for children age 18 and younger, including newborns, regardless of whether they were privately insured, received public assistance, or had no health insurance.

The current KID Core File contains 1.9 million records that, when weighted, provide national estimates for 6.7 million pediatric discharges in over 2,500 hospitals in 1997; the companion Hospital File has data on various hospital characteristics such as region, urban/rural location, size, ownership, and pediatric hospital status. The KID's large sample size permits analysis of relatively infrequent clinical conditions.

Data years currently available: 1997 (2000 age-enhanced data are expected in late 2002).

How to order: KID1997 may be purchased on CD-ROM for $220 with accompanying documentation from the AHRQ-designated Central Distributor (see address, p. 2). Updates on availability of additional data years and further information on ordering the KID also may be found on the AHRQ Web site.

Web-based HCUPnet

HCUPnet is an interactive, Web-based service designed for Federal and State policymakers, health plan executives, and others who need to identify, analyze, and compare hospital inpatient statistics at national, regional, and State levels. HCUPnet provides inpatient data from the NIS, KID, and 14 States participating in the SID.

Menu-driven HCUPnet has many enhanced features to help users get answers to questions about hospital care more quickly including: "Instant Tables" that give statistics on the most common conditions and procedures in U.S. hospitals; the "National Bill" for total hospital charges for the most expensive conditions treated in U.S. hospitals; and 7-year (beginning 1993) trends in length of hospital stays, in-hospital deaths, charges, and other outcomes for all conditions and procedures treated in U.S. hospitals.

Data years currently available: 1997-2000.

How to order: HCUPnet is available without charge on the AHRQ Web site at: **www.ahrq.gov/data/hcup/hcupnet.htm**

Software Tools

AHRQ has developed three powerful software tools—AHRQ Quality Indicators, Clinical Classifications Software, and Comorbidity Software—that can be used, not only on HCUP databases, but on other administrative databases as well.

AHRQ Quality Indicators (QIs). The AHRQ QIs are a set of quality indicators organized into three "modules," each of which measures quality associated with processes of care that occurr in an outpatient or an inpatient setting. The AHRQ QIs, which expand and enhance the original HCUP Quality Indicators, can be used with information routinely collected by hospitals to highlight potential quality concerns, identify areas that need further investigation, and track changes over time.

All three AHRQ QI modules rely solely on hospital inpatient administrative data:

- Prevention Quality Indicators identify hospital admissions for 16 ambulatory care sensitive conditions, which evidence suggests could have been avoided, in part, through high-quality outpatient care.
- Inpatient Quality Indicators, which reflect quality of care in hospitals, include 13 mortality indicators for conditions or procedures for which mortality can vary from hospital to hospital; 9 utilization indicators for procedures for which utilization varies across hospitals or geographic areas; and 7 volume indicators for procedures for which outcomes may be related to the volume of those procedures performed.
- Patient Safety Indicators reflect potential inpatient complications and other patient safety concerns following surgeries, other procedures, and childbirth.

How to order: As of September 2002, two AHRQ QI modules can be downloaded directly, without charge, from the AHRQ Web site—the Prevention Quality Indicators (**www.ahrq.gov/data/hcup/prevqi.htm**) and the Inpatient Quality Indicators (**www.ahrq.gov/data/hcup/inpatqi.htm**). Updates on availability of the Patient Safety Indicators module, now in development, and future refinements to the AHRQ QIs may be found on the AHRQ Web site.

Clinical Classifications Software (CCS). The CCS aggregates codes from the *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD-9-CM) into a smaller number of clinically meaningful, relatively homogenous clusters, which are more amenable to certain statistical analyses. ICD-9-CM codes are the standard used in all institutionally based records (e.g., hospitals and outpatient surgery centers) and in insurance claims data. CCS can be applied to all ICD-9-CM data from 1980 to the present, including SID and NIS, with simple adjustments needed for data prior to 1993. This "clinical grouper" helps users examine administrative data from a clinical perspective and is used in a variety of tasks, e.g., to develop clinically based profiles of resource use or to study patterns of diagnoses and procedures.

How to order: The CCS, with user instructions, can be downloaded directly from the AHRQ Web site. More information is available in the AHRQ Fact Sheet, "Clinical Classifications Software (CCS)" (AHRQ Pub. No. 00-P019).

Comorbidity Software. HCUP's Comorbidity Software assigns variables that identify coexisting conditions on hospital discharge records using

HCUP comprises a family of databases, Web-based products, and software that can be used to inform decisionmaking at the Federal, State, and local level.

Diagnosis Related Groups (DRGs) and codes from the *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM). Two SAS computer programs comprise the Comorbidity Software: One creates a format library that maps diagnosis codes into comorbidity indicators; the other applies the formats to an administrative dataset.

How to order: The Comorbidity Software with instructions can be downloaded, in ASCII format, directly from the AHRQ Web site at: **www.ahrq.gov/data/hcup/comorbid.htm**

Recent Research

HCUP Fact Books

Hospitalization in the United States, 1997 (HCUP Fact Book No. 1, AHRQ Pub. No. 00-0031) gives a snapshot of hospital care in U.S. community hospitals in 1997.

Procedures in U.S. Hospitals, 1997 (HCUP Fact Book No. 2, AHRQ Pub. No. 01-0016) provides a brief overview of procedures performed in the Nation's community hospitals in 1997.

Care of Women in U.S. Hospitals, 2000 (HCUP Fact Book No. 3, AHRQ Pub. No. 02-0044) provides an overview of hospital care for women, including obstetric care, and compares hospital stays for women and men.

See the AHRQ Web site for a comprehensive list of HCUP Research Notes. Other published statistics in tabular and chart form as well as summary analyses from various HCUP database releases and other documents are available on the AHRQ Web site.

How to order: HCUP Fact Books and Research Notes are published by AHRQ. Printed copies can be requested free of charge from the AHRQ Publications Clearinghouse (see "For More Information," below) or may be downloaded from the AHRQ Web site.

Journal Articles

Bao Y, Sturm R. How do trends for behavioral health inpatient care differ from medical inpatient care in U.S. Community Hospitals? *Journal of Mental Health Policy Economics* 2001; 4(1):55-63.

Basu J, Friedman B. Preventable illness and out-of-area travel of children in New York counties. *Health Economics* 2001; 10(1):67-78.

Birkmeyer JD, Siewers AE, Finlayson EV, et al. Hospital volume and surgical mortality in the United States. *New England Journal of Medicine* 2002 Apr 11;346(15):1128-1137.

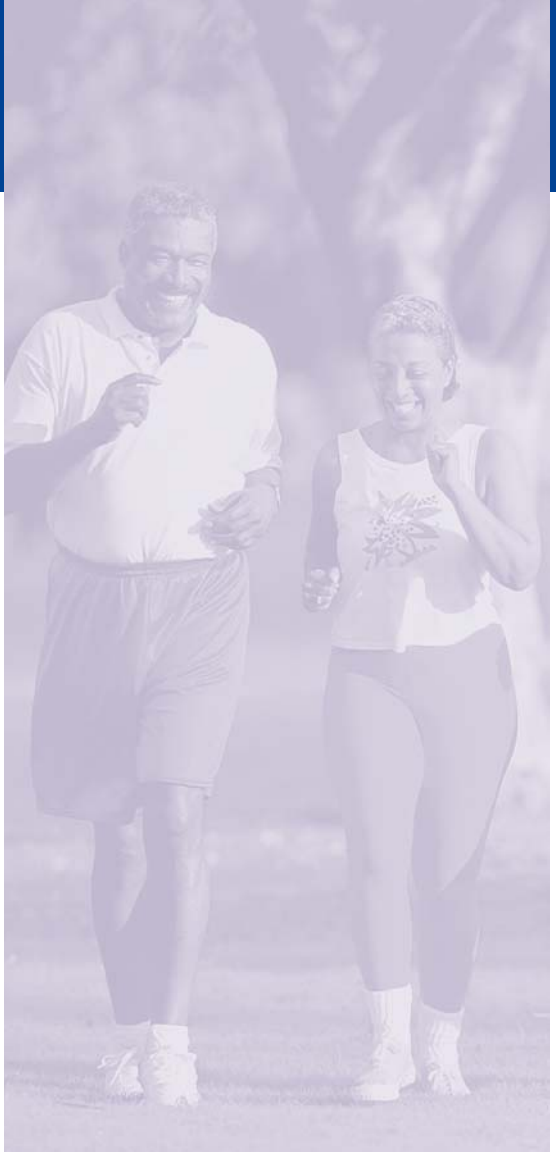
Brooks JM, McClellan M, Wong HS. The marginal benefits of invasive treatments for acute myocardial infarction: does insurance coverage matter? *Inquiry* 2000; 37(1):75-90.

Elixhauser A, Weinick RM, Betancourt JR, et al. Differences between Hispanics and non-Hispanic whites in use of hospital procedures for cerebrovascular disease. *Ethnicity & Disease* 2002 Winter; 12:29-37.

Farquhar CM, Steiner CA. Hysterectomy rates in the United States 1990-1997. *Obstetrics & Gynecology* 2002; 99(2):229-234.

Gross CP, Steiner CA, Bass EB, et al. Relation between prepublication release

Updates and additional information on all HCUP databases, software, and other resources are available at www.ahrq.gov



of clinical trial results and the practice of carotid endarterectomy. *Journal of the American Medical Association* 2000; 284(22):2886-2893.

Hellinger FJ, Fleishman JA. Estimating the national cost of treating people with HIV disease: patient, payer, and provider data. *Journal of Acquired Immune Deficiency Syndromes* 2000; 24(2):182-188.

Kim WR, Gross JB Jr, Poterucha JJ, et al. Outcome of hospital care of liver disease associated with hepatitis C in the United States. *Hepatology* 2001; 33(1):201-206.

Kovner C, Jones C, Zhan C, et al. Nurse staffing and postsurgical adverse events: an analysis of administrative data from a sample of U.S. hospitals, 1990-1996. *Health Services Research* 2002 Jun; 37(3):611-629.

Miller MR, Elixhauser A, Zhan C, Meyer GS. Patient safety indicators: using administrative data to identify potential patient safety concerns. *Health Services Research* 2001; 36(6; Part II online): 110-132.

Simonsen L, Morens DM, Elixhauser A, et al. Effect of rotavirus vaccination programme on trends in admission of infants to hospital for intussusception. *Lancet* 2001 Oct 13;358:1224-1229.

See the AHRQ Web site for a more comprehensive list of articles using HCUP data.

For More Information

Additional information on HCUP databases, software, and other products is available from the AHRQ Web site at www.ahrq.gov or by email at hcup@ahrq.gov.

An annotated listing of HCUP and other AHRQ publications may be found in the *AHRQ Publications Catalog*, which is available on the AHRQ Web site (select "Publications and Products") or from:

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P.O. Box 8547
Silver Spring, MD 20907-8547
Phone: 800-358-9295 (toll-free)

www.ahrq.gov

AHRQ Pub. No. 02-P030
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